CALS TEST NETWORK

AFCTB Test Report 93-040

AFCTB-ID 93-021

Technical Publication Transfer

Using:

Gateway Conversion Technology's Data

MIL-M-28001A (SGML)
MIL-R-28002A (Raster)

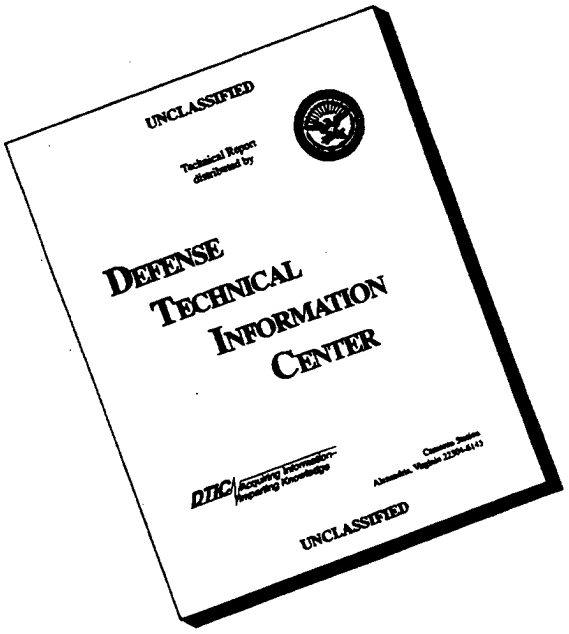
Quick Short Test Report

16 March 1993

Prepared for

Electronic Systems Center

DISCLAIMER NOTICE



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Quick Short Test Report

16 March 1993

Prepared By
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Contents

1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and to respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develope increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Gateway Conversion Technologies' interpretation and use of the CALS standards in transferring technical publication data. Gateway used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 93-021

Date of Evaluation: 16 March 1993

Evaluator:
George Elwood
Air Force CALS Test Bed
Det 2 HQ ESC/ENCP
4027 Colonel Glenn Hwy
Suite 200
Dayton, OH 45431-1672

Data Originator:
Joe Vide
Gateway Conversion Technology
4709 Creekstone Dr
Suite 300
Morrisville, NC 27560
(919) 941-0050

Data Description: Technical Manual Test
1 Document Declaration file
1 Text file
23 Raster files

Data Source System:

Text/Standard Generalized Markup Language (SGML)
HARDWARE
Unknown
SOFTWARE
Unknown

Raster
HARDWARE
Unknown
SOFTWARE
Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

- AFCTN *Tapetool v1.2.8 UNIX*
- Texas Instruments (TI) *Tapetool v1.0.1*
- AGFA Compugraphics *CAPS/CALS v40.4*

MIL-R-28002 (Raster)

SUN SparcStation 2

- ArborText *g42tiff*
- AFCTN *validg4*
- AFCTN *calstb.475*
- IGES Data Aanlysis (IDA) *IGESView v3.0*
- Island Graphics' *IslandPaint v3.0*

Cheetah

- Inset Systems *HiJaak v2.1*
- Inset Systems *HiJaak Window v1.0*
- Corel *Ventura Publisher*

Standards Tested:

MIL-STD-1840A
MIL-M-28001A
MIL-R-28002A

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with the magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. A packing list, showing all files recorded on the tape, was not encluded.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool v1.2.8* utility, with no reported errors. The tape was also read using TI's *Tapetool* with no reported errors. The tape was read using AGFA's *CAPS read1840A* without a reported error.

3.2.2 Declaration and Header Fields

There were no reported errors in the Document Declaration file or data file headers.

The physical structure of the tape meets the CALS MIL-STD-1840A requirements.

4. IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included on this tape.

5. SGML Analysis

The SGML file on this tape was short and was visually inspected. The file basically calls the 23 Raster images into a document. No errors were noted during the inspection.

6. Raster Analysis

This tape contained 23 Raster files. All files were evaluated using the AFCTN *validg4* utility which reported no errors. The files were read into the AFCTN *calstb.475* viewing utility without a problem. It was noted that several of the images appeared to be scanned at a slight angle. The overall quality of the images was good with no orphan pixels noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

File D001R001 was selected for the hard copy output of these evaluations. The file was converted using Arbortext's *g42tiff* utility without a problem. The resulting file was read into Island Graphics' *IslandPaint*, displayed and printed.

The file was imported into Inset Systems' *HiJaak for Windows* without a reported error. The file was displayed and printed without a problem.

The file was read into IDA's *IGESView*, displayed and printed without a reported problem.

The file was converted using Rosetta Technologies' *Prepare* with the resulting file being read into *Preview.* No problems were encountered during this process.

All files were converted using Inset Systems' *HiJaak for DOS* without a problem into an IMG format. The resulting files were read into Corel's *Ventura Publisher,* displayed and printed. The entire document is included in the Appendix of this report.

The Raster files meet the CALS MIL-R-28002A specification.

7. CGM Analysis

No Computer Graphics Metafile (CGM) files were included on this tape.

8. Conclusions and Recommendations

In summary, the tape from Gateway Conversion Technology was correct. The tape could be read properly using all of the tape reading utilities available in the AFCTB, without any reported error. The physical structure of the tape meets the CALS standards.

The SGML file meets the CALS MIL-M-28001A specification.

All 23 Raster files meet the CALS MIL-R-28002A specification.

The tape and data files provided to the AFCTB meet the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

```
Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release Number 8
  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information
    ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Mar 15 15:19:17 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/tapetool8/Set071

                                                                    Page: 1

                                                Record
                                                Format/     Block      Selected/
File Name                 File Type             Length  Length/Total  Extracted
-------------------------------------------------------------------------------
D001                      Document Declaration  D/00260 02048/000001  Extracted
D001R001                  Raster                F/00128 02048/000015  Extracted
D001R002                  Raster                F/00128 02048/000031  Extracted
D001R003                  Raster                F/00128 02048/000019  Extracted

                          <<<<< PART OF LOG REMOVED HERE >>>>>

D001R021                  Raster                F/00128 02048/000022  Extracted
D001R022                  Raster                F/00128 02048/000021  Extracted
D001R023                  Raster                F/00128 02048/000007  Extracted
D001T024                  Text                  D/00260 02048/000002  Extracted

Catalog Process terminated normally.
```

9.2 Tape Evaluation Log

```
Air Force CALS Test Network Tape Evaluation - Version 1.2; Release Number 8
  Standards referenced:
    ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Mar 15 15:18:55 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01                                                              4

  Label Identifier: VOL1
  Volume Identifier: CALS01
  Volume Accessibility:
  Owner Identifier:
  Label Standard Version: 4

HDR1D001            CALS0100010001000000 93067 00000 000000

  Label Identifier: HDR1
  File Identifier: D001
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date:  93067
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000000
  Implementation Identifier:

HDR2D0204800260                                  00

  Label Identifier: HDR2
  Recording Format: D
  Block Length: 02048
  Record Length: 00260
  Offset Length: 00
```

```
************ Tape Mark ***************

  Actual Block Size Found = 2048 Bytes.

  Number of data blocks read = 1.

************ Tape Mark ***************

EOF1D001            CALS0100010001000000 93067 00000 000001

  Label Identifier: EOF1
  File Identifier: D001
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date:  93067
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000001
  Implementation Identifier:

EOF2D0204800260                                    00

  Label Identifier: EOF2
  Recording Format: D
  Block Length: 02048
  Record Length: 00260
  Offset Length: 00

************ Tape Mark ***************

HDR1D001R001        CALS0100010002000000 93067 00000 000000

  Label Identifier: HDR1
  File Identifier: D001R001
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0002
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date:  93067
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000000
```

```
  Implementation Identifier:

HDR2F0204800128                                    00

  Label Identifier: HDR2
  Recording Format: F
  Block Length: 02048
  Record Length: 00128
  Offset Length: 00

************ Tape Mark ***************

  Actual Block Size Found = 2048 Bytes.

  Number of data blocks read = 15.

************ Tape Mark ***************

EOF1D001R001         CALS0100010002000000 93067 00000 000015

  Label Identifier: EOF1
  File Identifier: D001R001
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0002
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date:  93067
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000015
  Implementation Identifier:

EOF2F0204800128                                    00

  Label Identifier: EOF2
  Recording Format: F
  Block Length: 02048
  Record Length: 00128
  Offset Length: 00

************ Tape Mark ***************

                          <<<<< PART OF LOG FILE REMOVED HERE >>>>>

************ Tape Mark ***************
```

```
HDR1D001R023          CALS0100010024000000 93067 00000 000000

  Label Identifier: HDR1
  File Identifier: D001R023
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0024
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date:  93067
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000000
  Implementation Identifier:

HDR2F0204800128                                    00

  Label Identifier: HDR2
  Recording Format: F
  Block Length: 02048
  Record Length: 00128
  Offset Length: 00

************ Tape Mark ***************

  Actual Block Size Found = 2048 Bytes.

  Number of data blocks read = 7.

************ Tape Mark ***************

EOF1D001R023          CALS0100010024000000 93067 00000 000007

  Label Identifier: EOF1
  File Identifier: D001R023
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0024
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date:  93067
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000007
  Implementation Identifier:

EOF2F0204800128                                    00
```

```
  Label Identifier: EOF2
  Recording Format: F
  Block Length: 02048
  Record Length: 00128
  Offset Length: 00

************ Tape Mark ***************

HDR1D001T024          CALS0100010025000000 93067 00000 000000

  Label Identifier: HDR1
  File Identifier: D001T024
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0025
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date:  93067
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000000
  Implementation Identifier:

HDR2D0204800260                                    00

  Label Identifier: HDR2
  Recording Format: D
  Block Length: 02048
  Record Length: 00260
  Offset Length: 00

************ Tape Mark ***************

  Actual Block Size Found = 2048 Bytes.

  Number of data blocks read = 2.

************ Tape Mark ***************

EOF1D001T024          CALS0100010025000000 93067 00000 000002

  Label Identifier: EOF1
  File Identifier: D001T024
  File Set Identifier: CALS01
  File Section Number: 0001
  File Sequence Number: 0025
```

```
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date:  93067
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000002
  Implementation Identifier:

EOF2D0204800260                                    00

  Label Identifier: EOF2
  Recording Format: D
  Block Length: 02048
  Record Length: 00260
  Offset Length: 00

********** Tape Mark **********

********** Tape Mark **********

########## End of Volume CALS01 ##########

########## End Of Tape File Set ##########

Deallocating /dev/rmt0...

Tape Import Process terminated normally.
```

9.3 Tape File Set Validation Log

```
Air Force CALS Test Network File Set Evaluation - Version 1.2; Release Number 8
  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information
    MIL-R-28002 (1989) - Raster Graphics Representation In Binary
                         Format, Requirements For

Mon Mar 15 15:19:17 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set071

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: GATEWAY CONVERSION TECHNOLOGIES
srcdocid: 33D7-3-295-4
srcrelid: NONE
chglvl: 0,0,19930308 PRELIMINARY
dteisu: 19930308
dstsys: GATEWAY CONVERSION TECH., 4709 CREEKSTONE DR., STE. 300, MORRISVILLE, NC 27650
dstdocid: TO #33D7-3-295-4
dstrelid: NONE
dtetrn: 19930308
dlvacc: F33657-84-C-0008
filcnt: R23,T1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: PAGE TURNER
docttl: COMPUTER MODULE UNIT ASSEMBLY


Found file: D001R001
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: 33D7-3-295-4
dstdocid: TO #33D7-3-295-4
txtfilid: W
figid: cover
srcgph: cover
doccls: UNCLASSIFIED
rtype: 1
```

```
rorient: 000,270
rpelcnt: 002552,003304
rdensty: 0300
notes: NONE

Saving Raster Header File: D001R001_HDR
Saving Raster Data File: D001R001_GR4

                        <<<<< PART OF LOG FILE REMOVED HERE >>>>>>

Found file: D001R023
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: 33D7-3-295-4
dstdocid: TO #33D7-3-295-4
txtfilid: W
figid: A-7
srcgph: A-7
doccls: UNCLASSIFIED
rtype: 1
rorient: 000,270
rpelcnt: 002552,003304
rdensty: 0300
notes: NONE

Saving Raster Header File: D001R023_HDR
Saving Raster Data File: D001R023_GR4

Found file: D001T024
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: 33D7-3-295-4
dstdocid: TO #33D7-3-295-4
txtfilid: W
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T024_HDR
Saving Text Data File: D001T024_TXT

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
```

No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

10. Appendix B - Detailed Raster Analysis

10.1 File D001R001

10.1.1 Output g42tiff/IslandPaint

TO 33D7-3-295-4

TECHNICAL MANUAL

ILLUSTRATED PARTS BREAKDOWN

COMPUTER MODULE UNIT ASSEMBLY

PN BA23-A

7021-01-268-5744

(DIGITAL EQUIPMENT CORP)

(COMMERCIAL MANUAL)

CONTRACT NO. F33657-84-C-0004

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10.1.2 Output HiJaak for Windows

TO 33D7-3-295-4

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10.1.3 Output IGESView

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TO 33D7-3-295-4

10.1.4 Output Preview

TECHNICAL MANUAL

ILLUSTRATED PARTS BREAKDOWN

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10.1.5 Output Ventura Publisher

TO 33D7-3-295-4

TECHNICAL MANUAL

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